Private: Halton DKS – Multi-nozzle diffuser (terminated)



Overview

Terminated as of 1st July 2023
-> replaced with Halton Jaz JSC and Halton Jaz JMC

- Supply air pattern can freely be directed horizontally to any direction through adjustable nozzles
- Radials swirl and vertical air patterns are also possible
- Directional nozzles with two-slot air path, efficiently deflects the airstreams.
- Supply air jet velocity is efficiently reduced due to high mixing effect.
- Detachable front plate in enables cleaning of the diffuser and supply duct work
- Size 600 adapted for installation in modular 600×600 mm suspended ceiling

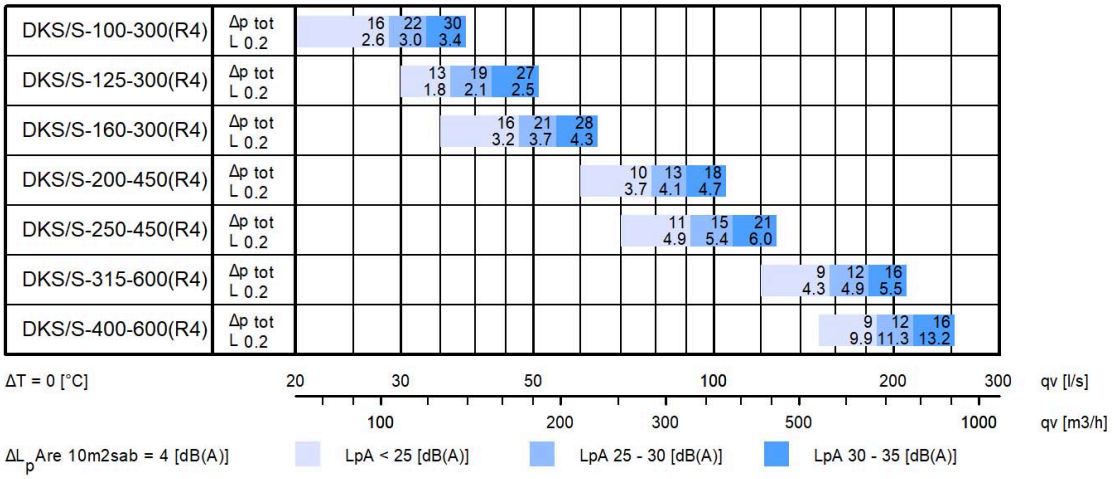
Accesories

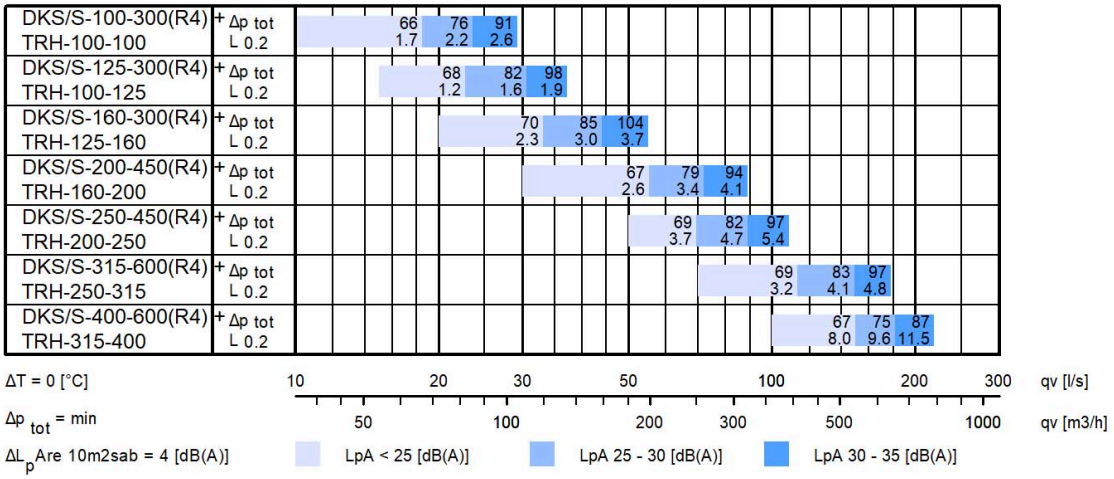
- Balancing plenum with measurement and adjustment functions

Halton reserves the right to alter products without notice.

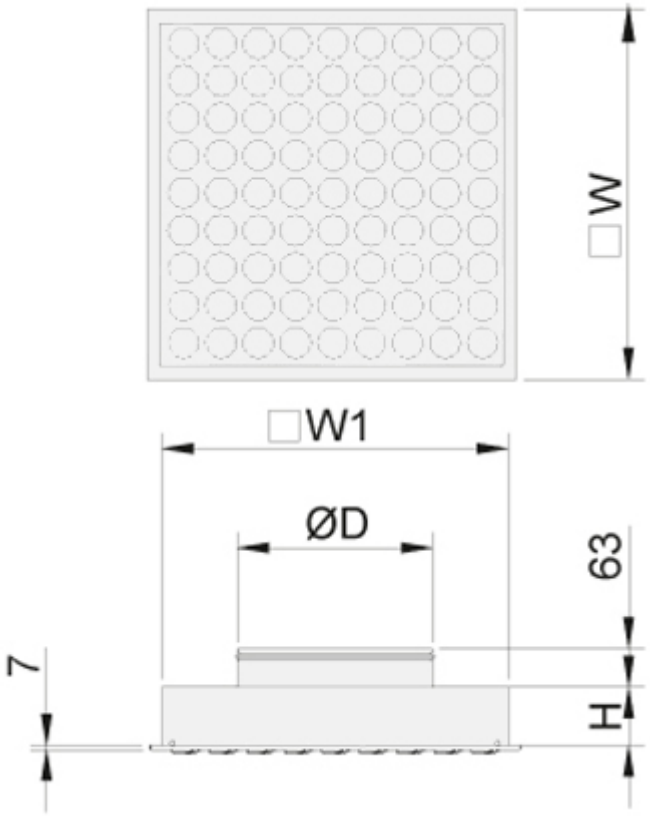
Selection

Quick selection





Dimensions and weight



NS	W	W1	H	ØD
100-300	300	259	77	99
100-300-600	595	259	77	99
125-300	300	259	77	124
125-300-600	595	259	77	159
160-300	300	259	77	159
160-300-600	595	259	77	159
160-450	452	411	97	159
160-450-600	595	411	97	159
200-450	452	411	97	199
200-450-600	595	411	97	199
250-600	595	554	97	199
250-450	452	411	97	249
250-450-600	595	411	97	249
250-600	595	554	97	249
315-600	595	554	97	314
400-600*	595	554	97	399

NS = Connection size – Diffuser size
* = size available only with airflow pattern S (1,2,3 or 4 directions)

Weight

NS	kg
100-300	1.75
125-300	1.77
160-300	1.77
160-450	3.59
200-450	3.55
250-450	5.32
200-600	3.55
250-600	5.35
315-600	5.33
400-600	5.40

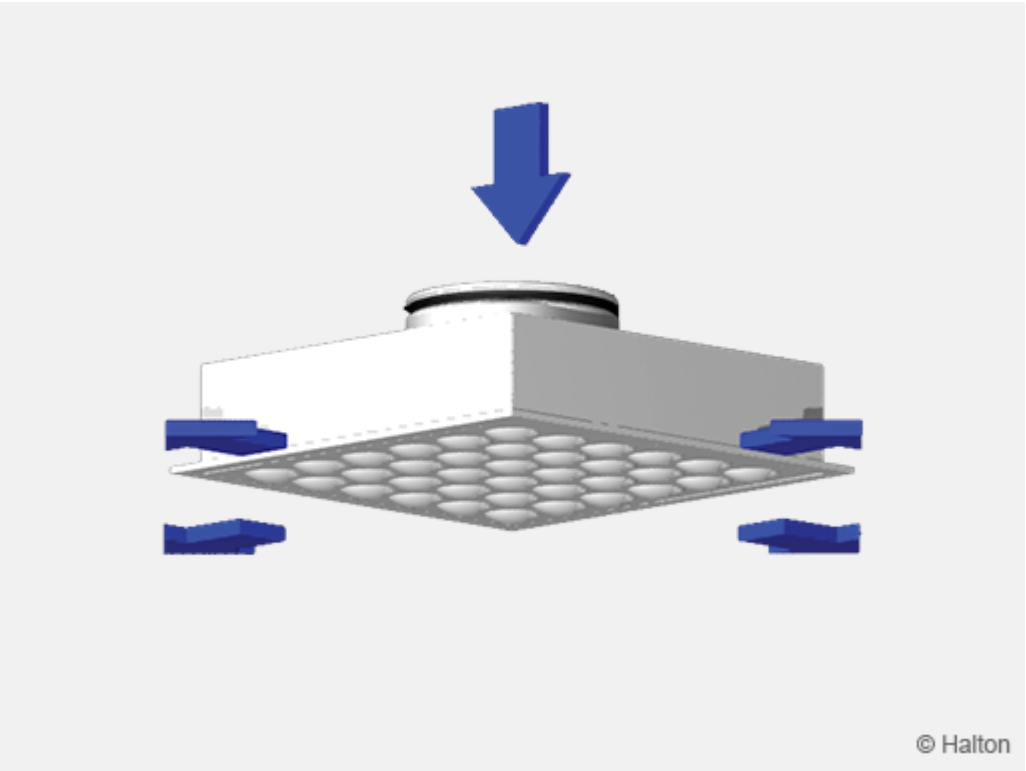
Material

Part	Material	Note
Frame	Galvanised steel	
Front panel	Steel	
Nozzle	Polyacetal POM	Colour alternatives: White, Grey and Black
Coupling sleeve	Galvanised steel	
Gasket	Rubber compound	
Finishing	Painted White (RAL 9003)	Special colours available

Accessories

Accessory	Code	Description
Balancing plenum	TRI	For balancing and equalising the airflow and attenuating the duct noise
Balancing plenum	TRH	For balancing and equalising the airflow and attenuating the duct noise

Function

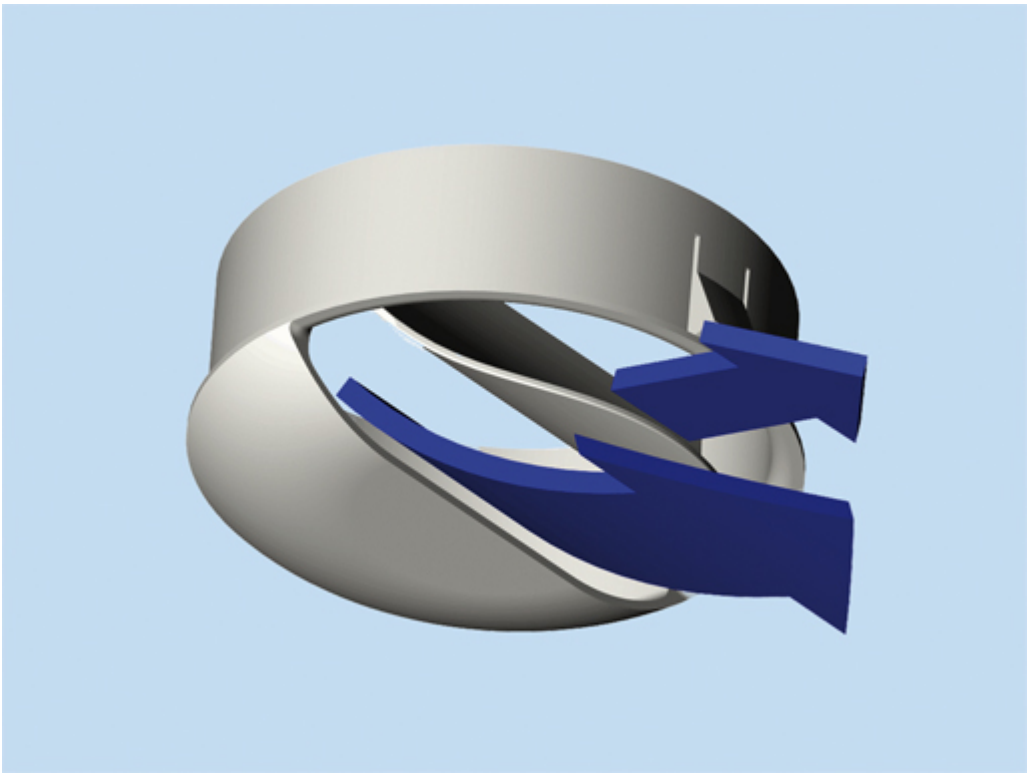


Air is supplied both horisontally and vertically into the space through the front panel of the diffuser.

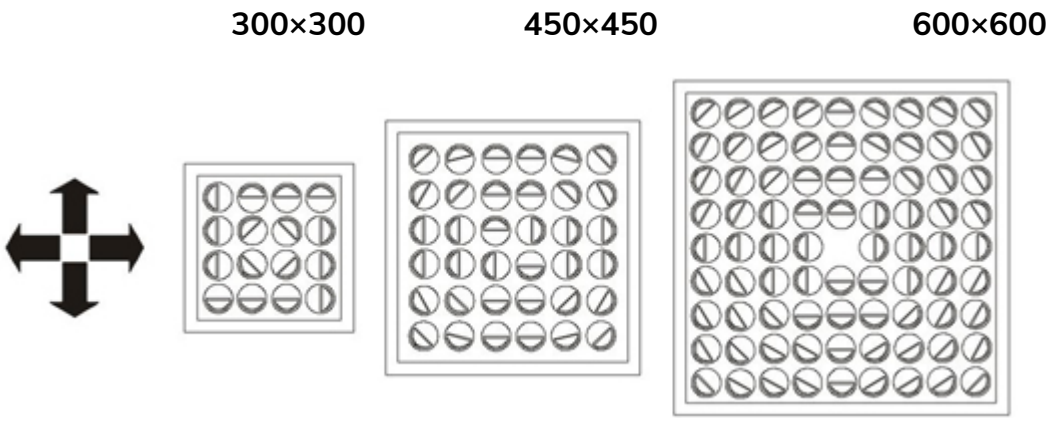
The supply air pattern can be directed radially in the direction(s) desired (1, 2, 3 and 4) by rotating the nozzles (model DKS/S). Horisontal swirl jet and vertical air patterns can also be achieved by adjusting the nozzles (model DKS/W).

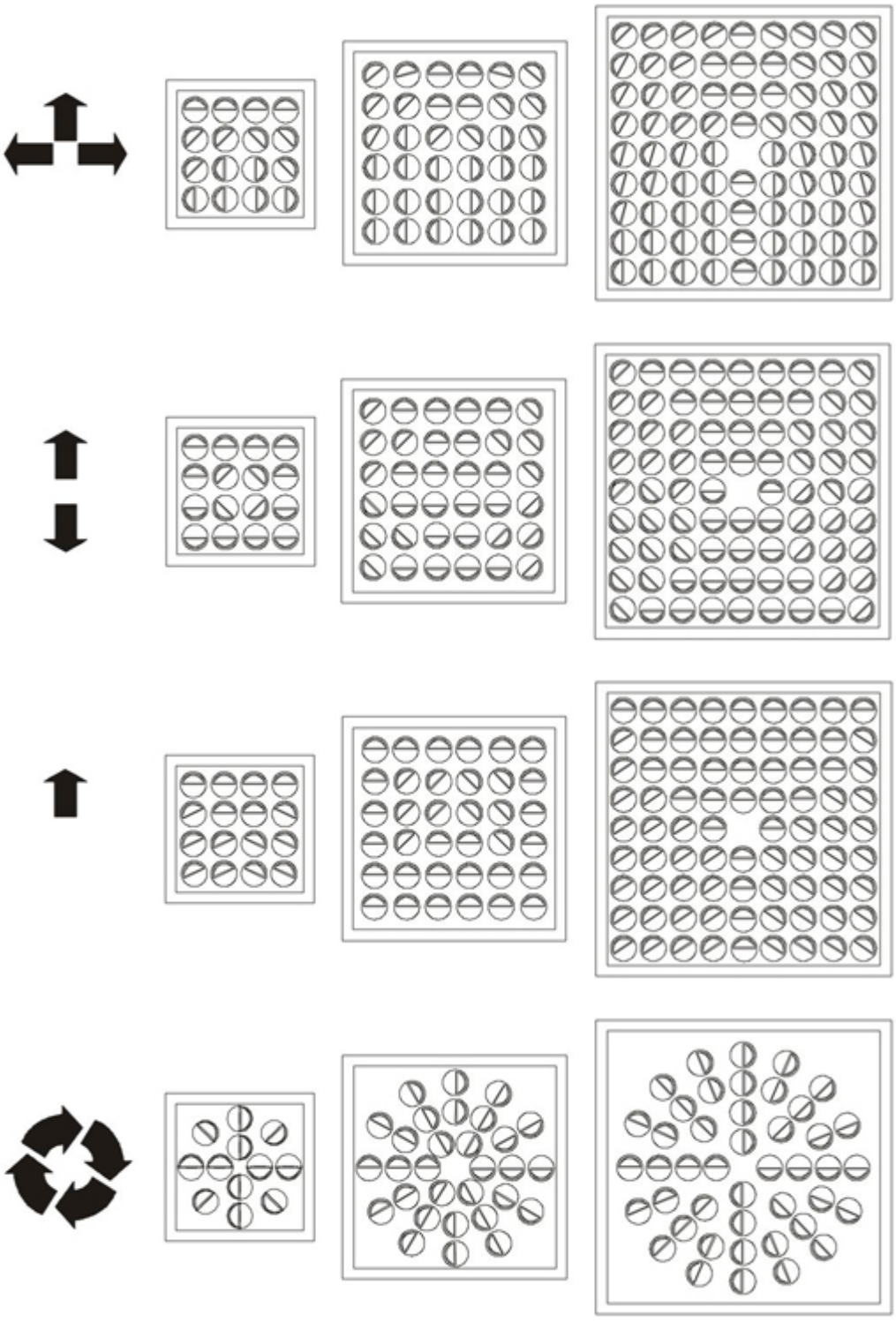
Direction of the supply air jet has no effect on the pressure drop or the airflow rate.

The recommended maximum air temperature difference between supply and room air is 10 °C. The maximum recommended temperature for plastic material is 60°C.

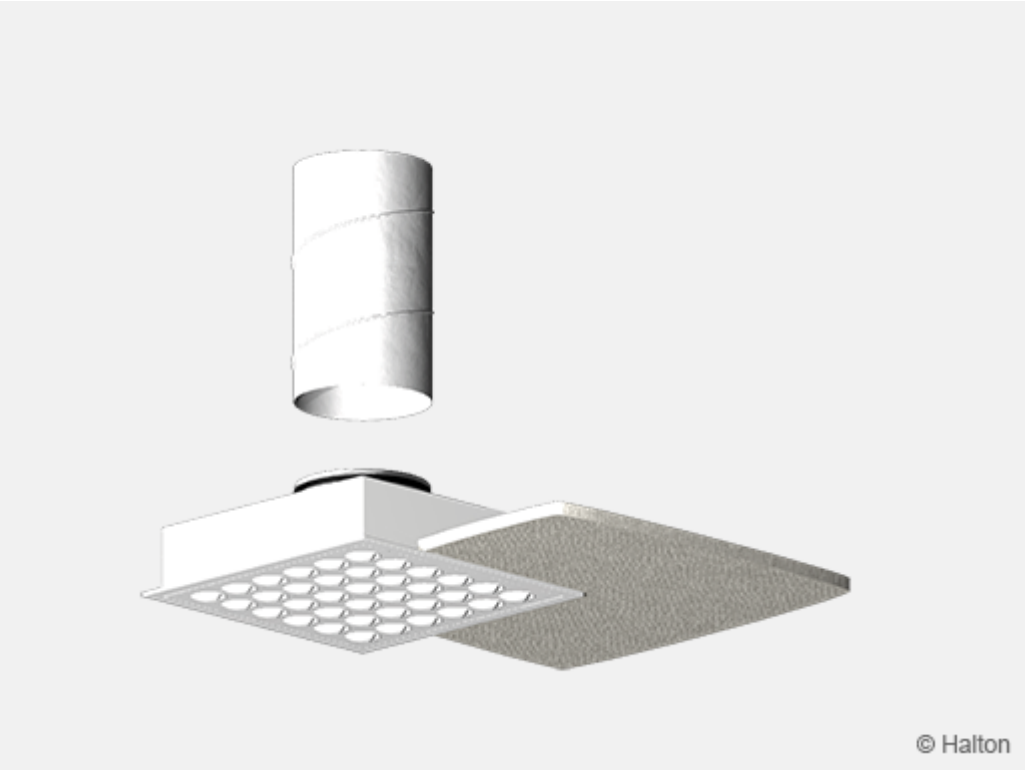


Nozzle Settings





Installation

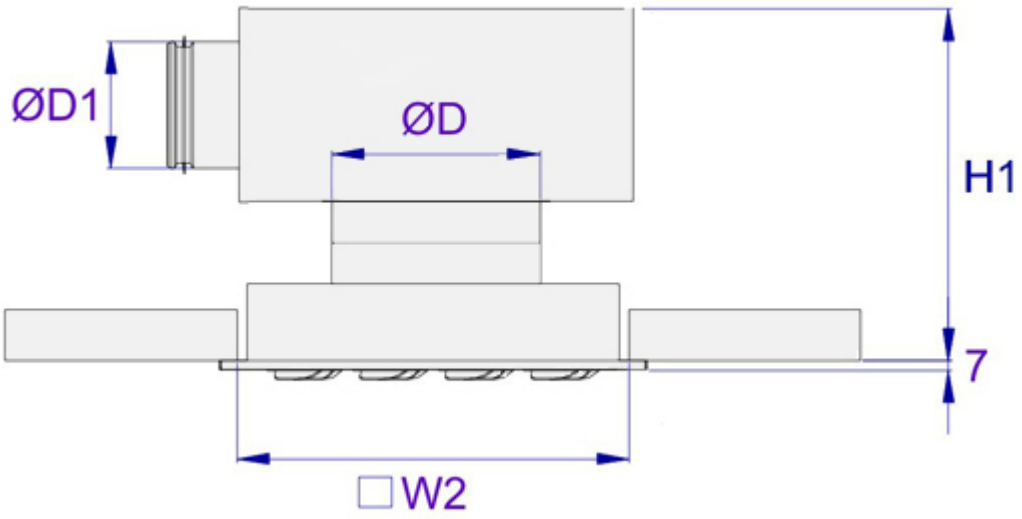


The diffuser is connected either directly to the duct by screwing or riveting, or alternatively to the Halton TRI or Halton TRH balancing plenum.

Direct the flow pattern in the desired directions by individually rotating each nozzle in order to meet the required specifications.

A minimum safety distance upstream of the diffuser of 3xD is recommended.

Installation with plenum Halton TRI

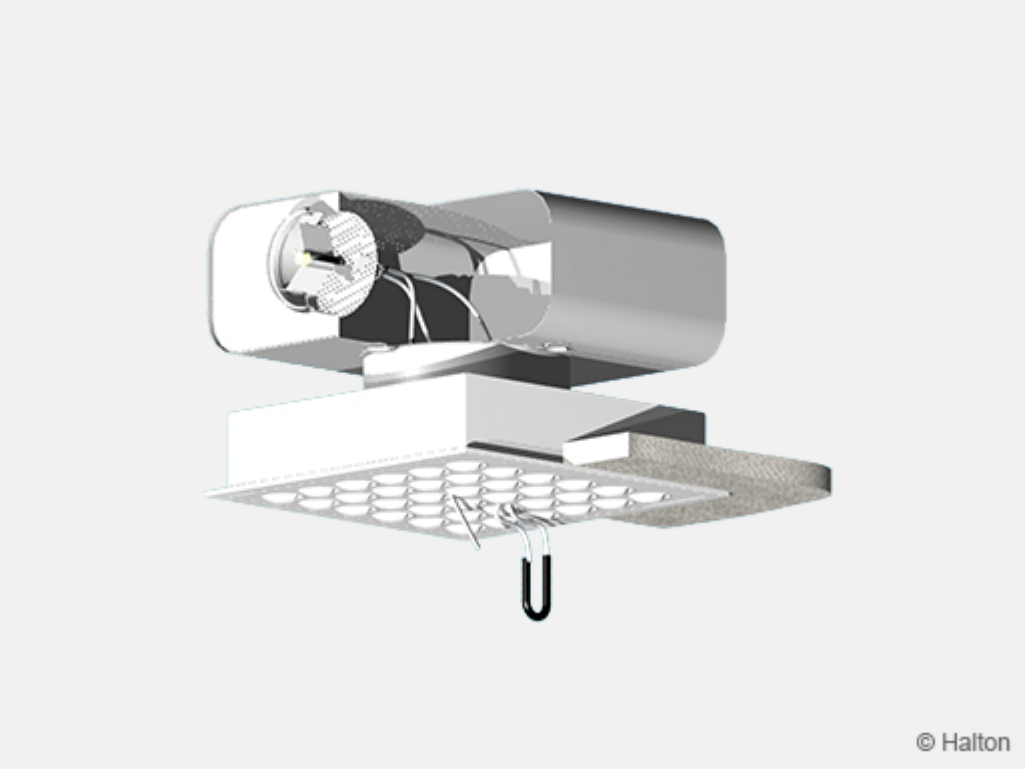


The collar of Halton TRI plenum can be installed either internally in the plenum or externally on the bottom of the plenum. The height of the unit is presented in the table below for the external installation. When the collar is installed internally, the total height H1 is reduced by 60 mm.

The technical performance for the combination of supply air diffuser and Halton TRI plenum is presented separately for the two different installations.

NS	Ø D1	TRI	W2	H1
100-300	100	TRI-100-100	270	293-343
125-300	100	TRI-100-125	270	293-343
160-300	125	TRI-125-160	270	323-373
160-450	160	TRI-160-160	425	385-435
200-450	160	TRI-160-200	425	385-435
250-450	200	TRI-200-250	425	435-485
200-600	200	TRI-200-200	565	435-485
250-600	250	TRI-250-250	565	499-549
315-600	250	TRI-250-315	565	499-549
400-600	250	TRI-250-400	565	499-549

Adjustment



It is not possible to adjust the airflow rate in Halton DKS itself.

In order to enable the adjustment and measurement of airflow rate it is recommended to connect the diffuser to TRI balancing plenum. The supply flow rate is determined by using the MSM measurement and adjustment module.
Open the front panel and pass the tubes and control spindle through the plastic nozzle. Replace the front panel.

Measure the differential pressure using a manometer. The flow rate is calculated using the formula below.

$$q_v = k * \sqrt{\Delta p_m}$$

Adjust the airflow rate by rotating the control spindle until the desired setting is achieved. Lock the damper position with a screw.

Replace the tubes and spindle in the plenum and replace the diffuser front panel.

The k factor for installations with different safety distances
(D= duct diameter)

TRI/S	>8xD	min 3xD
100	6.0	7.5
125	9.9	12.6
160	16.9	21.9
200	28.3	31.0
250	47.9	51.5
315	78.6	–

Servicing



Detach the front panel of the diffuser by gently pulling it down and let it balance on the hinges. Each nozzle can be easily removed by pressing the stoppers and then pushing the nozzle through the front panel.

Wipe the nozzles and the front panel with a damp cloth. The nozzles are replaced into the front plate by pushing. Reattach the front panel.

Option with balancing plenum

Remove the measurement and adjustment module by gently pulling the shaft; (not the control spindle or measurement tubes!).

Wipe the parts with a damp cloth, instead of immersing in water.

Reassemble the measurement and adjustment module by pushing the shaft until the unit meets the stopper.
Push the front panel back into place so that the springs lock.

Specification

The diffuser must be made of epoxy-painted steel with a white (RAL 9003) standard colour. Air is supplied through plastic nozzles, which must have a two-slot design in order to ensure efficient mixing of supply air. Nozzles must also be individually adjustable in order to provide high flexibility

for the adjustment of the throw pattern.

Option 1: No balancing plenum

The diffuser has a galvanised steel casing with a spigot with integral gasket for connection to circular duct.
The diffuser has a detachable perforated front panel that provides access to the duct.

Option 2: With balancing plenum

The diffuser is connected to a balancing plenum equipped with a measurement and adjustment module.
The diffuser has a detachable front panel that provides access to the measurement and adjustment module in the plenum.

The balancing plenum has a spigot with integral gasket for air-tight duct connection.
The balancing plenum has sound attenuation material made of polyester fiber with a washable surface or mineral wool.

Order Code

DKS/S-D-A; WS-CO-ZT

S = Airflow pattern
S 1, 2, 3 or 4 directions
W Swirl jet construction

D = Connection size
100, 125, 160, 200, 250, 315, 400

A = Diffuser size
300×300, 450×450, 600×600

Other Options and Accessories

WS = Width of suspended ceiling tile
NA Not Assigned
600 600×600 (if A=300 or 450)

CO = Colour
SW White (RAL 9003)
X Special colour

ZT =Tailored product

N	No
Y	Yes

Sub products

TRI	Balancing plenum
TRH	Plenum

Code example

DKS/S-100-300, WS=NA, CO=SW, ZT=N